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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/884,037

06/20/2001

Hiroyuki Sasai

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7590

07/02/2004

WENDEROTH, LIND & PONACK, L.L.P.  
2033 K STREET N. W.  
SUITE 800  
WASHINGTON, DC 20006-1021

EXAMINER

BELLO, AGUSTIN

ART UNIT

PAPER NUMBER

2633

8

DATE MAILED: 07/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/884,037

Applicant(s)

SASAI ET AL.

Examiner

Agustin Bello

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 June 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
4a) Of the above claim(s) 1-10 and 12 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 11 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 20 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of the species illustrated in Figure 7 and the claims reading thereon in the reply filed on 6/4/04 is acknowledged. However, in contrast to the applicant's assertion that claims 11 and 12 are readable on the elected species, the examiner has determined that only claim 11 is readable on the elected species illustrated in Figure 7. The examiner has made this determination based on the disclosure in claim 12 of a "radio-frequency amplification part" in line 6, which is not shown in Figure 7. Further evidence that claim 12 is readable on a species distinct from that shown in Figure 7 can be found on page 34 line 13 of the specification which recites in reference to Figure 7: "when the transmission path is a coaxial line or waveguide instead of the optical fiber 120, the radio-frequency optical transmission part 730 may be replaced with a radio-frequency amplification part to transmit the radio frequency." Hence, the recitation of a radio-frequency amplification part in claim 12 describes a part for an electrical transmission system distinct from the optical transmission system shown in Figure 7.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

3. The abstract of the disclosure is objected to because it is not limited to a single paragraph and it exceeds 150 words. Correction is required. See MPEP § 608.01(b).

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***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art admitted by the applicant shown in Figure 8 of the instant application in view of Price (U.S. Patent No. 6,552,439).

Regarding claim 11, the prior art admitted by the applicant shown in Figure 8 of the instant application teaches a radio-frequency transmitter (Figure 8) with a function of distortion compensation (page 2 lines 3-4 of the specification), comprising: a branch part (reference numeral 110 in Figure 8) for branching an electrical signal into two; a delay part (reference numeral 510 in Figure 8) for delaying one of the electrical signal branched by said branch part by a predetermined length of time, a distortion generating part (reference numeral 520 in Figure 8) for generating, from the other of the electrical signals branched by said branch part, a distortion component of a predetermined phase and amplitude (page 3 lines 8-13 of the specification); a combiner (reference numeral 710 in Figure 8) for combining the electrical signal outputted from said delay part (reference numeral 510 in Figure 8) and the distortion component outputted from said distortion generating part (reference numeral 520 in Figure 8); a frequency conversion part (reference numeral 720 in Figure 8) for converting a signal into a predetermined frequency; and a radio-frequency optical transmission part (reference numeral 710 in Figure 8) for converting a resulting signal converted into the predetermined frequency by said frequency conversion part

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into an optical signal; wherein the distortion component generated in said distortion generating part is opposite in phase to a distortion component occurred in said radio-frequency optical transmission part (page 3 lines 10-13 of the specification). The prior art admitted by the applicant shown in Figure 8 differs from the claimed invention in that it fails to specifically teach that the frequency conversion part converts a resulting signal outputted from said combiner prior to conversion from an electrical signal to an optical signal. In contrast, the prior art admitted by the applicant shown in Figure 8 teaches a frequency converter for converting a signal into a predetermined frequency at the input of the splitter combiner pair, hence resulting in a structural difference between the prior art shown in Figure 8 and the claimed invention shown in Figure 7. However, Price, in the same field of predistortion generation, teaches it is well known in the art to convert the frequency of a signal (e.g. conversion from frequency  $\Lambda_{BD}$  to frequency  $\Lambda_{eD}$  by frequency converter 46 in Figure 8(b)) prior to conversion from an electrical signal to an optical signal, wherein the electrical signal has been pre-compensated in a manner similar to that claimed by the applicant. One skilled in the art would have been motivated to convert the frequency of a signal prior to conversion from an electrical signal to an optical signal in order to match the frequency of the signal to the data rate being transmitted (column 7 lines 57-59 of Price). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to place the frequency conversion part of the prior art admitted by the applicant in Figure 8 between the output of the combiner and the input of the radio-frequency optical transmission part in order to match the frequency of the resulting signal output from the combiner to the data rate being transmitted as taught by Price.

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***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (703)308-1393. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703)305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Agustin Bello  
Examiner  
Art Unit 2633

AB

A handwritten signature in black ink, appearing to read "A. Bello", is written over a horizontal dashed line.